

What is claimed is:

1. A communication path control method in a communication network comprising a communication equipment connected to a plurality of telecommunication companies' networks, a network controller connected to said communication equipment, and a server for supplying network control information to said network controller, said network controller supplying communication path control information generated on the basis of said network control information to said communication equipment, comprising the steps of:

storing information entries each indicative of definition of communication services provided by each of said telecommunication companies' networks into said server;

issuing a communication service request, in which specifications of a communication path to be assured for a user terminal connected to said communication equipment are designated, from the user terminal to said server;

retrieving an information entry of the communication service definition matched with said communication service request and notifying said user terminal of a search result by said server; and

transmitting network control information generated on the basis of said communication service request and retrieved communication service definition from said server to said network controller  
5 in response to a notification of agreement from said user terminal to said search result.

2. The communication path control method according to claim 1, wherein when an information entry of  
10 communication service definition matched with said communication service request is not retrieved, said server notifies said user terminal of, as said search result, a combination of communication service definition of a plurality of entries, said combination  
15 satisfying said communication service request.

3. The communication path control method according to claim 1, wherein said communication service definition includes information indicative of  
20 bandwidth of the communication path provided by each telecommunication company's network.

4. The communication path control method according to claim 1, wherein said communication service  
25 definition includes information indicative of quality

of communication service provided by each telecommunication company's network.

5. The communication path control method according  
5 to claim 1, wherein said communication service request includes information indicative of bandwidth of a communication path to be assured for a user terminal.

6. The communication path control method according  
10 to claim 1, wherein said communication service request includes information indicative of quality of communication service on a communication path to be assured for a user terminal.

7. The communication path control method according  
15 to claim 1, wherein said communication service request includes information indicating whether a backup communication path should be assured for a user terminal or not.

20

8. A communication service request processing  
method for a communication network including a  
communication equipment connected to a plurality of  
telecommunication companies' networks and a network  
25 controller connected to said communication equipment,

comprising the steps of:

transmitting information indicative of  
definition of communication service from a management  
terminal of each telecommunication company's network  
5 to an assistant server connected to said network  
controller;

storing communication service definition  
information received from said management terminal as  
a supply information entry by said assistant server;

10 issuing a communication service request, in which  
specifications of a communication path to be assured  
for a user terminal connected to said communication  
equipment are designated, from the user terminal to  
said assistant server;

15 retrieving an information entry of the  
communication service definition matched with said  
communication service request and notifying said user  
terminal of a search result by said assistant server;

after receiving a notification of agreement from  
20 said user terminal to said search result, transmitting  
network control information for establishing a  
communication path designated by said communication  
service request from said assistant server to said  
network controller; and

25 supplying communication path control information

generated on the basis of said network control information from said network controller to said communication equipment.

5 9. The communication service request processing method according to claim 8, wherein when an information entry of communication service definition matched with said communication service request is not retrieved, said assistant server notifies said user terminal of,  
10 as said search result, a combination of communication service definition of a plurality of entries, said combination satisfying said communication service request.

15 10. The communication service request processing method according to claim 8, wherein the network control information transmitted from said assistant server to said network controller includes routing control information used by a telecommunication company's  
20 network in which said communication path is set,

said path control information is informed from said network controller to a network controller of said telecommunication company's network, and

said communication equipment establishes a  
25 communication path on the basis of communication path

control information supplied from said network controller and when a packet is received from said user terminal, said communication equipment adds said routing control information to the received packet and  
5 transmits the packet to said communication path.

11. A server for performing communication with a user terminal via a communication network and supplying network control information to a network controller  
10 for controlling a communication node connected to both said user terminal and a plurality of telecommunication companies' networks, comprising:

memory means for storing information entries indicative of definition of communication service  
15 provided by each of said telecommunication companies' networks;

first means for receiving a communication service request in which specifications of a communication path to be assured for a user terminal are designated, from  
20 the user terminal, searching said memory means for an information entry of communication service definition matched with said communication service request, and notifying said user terminal of a search result; and

second means for transmitting network control  
25 information generated on the basis of said

communication service request and the retrieved communication service definition to said network controller in response to a notification of agreement from said user terminal to said search result,

5            wherein said network controller instructs said communication node, in response to network control information received from said server, to establish a communication path so that transmission packets from said user terminal are transferred to a  
10 telecommunication company's network which provides communication service definition matched with said communication service request.

12. The server according to claim 11, wherein said  
15 first means includes means for notifying said user terminal of, as said search result, a combination of communication service definition of a plurality of entries when no information entry of communication service definition matched with said communication  
20 service request is retrieved, said communication service request being satisfied with said combination.

13. The server according to claim 11, wherein each  
25 of information entries stored in said memory means includes, as a part of said communication service

definition information, information indicative of bandwidth of a communication path provided by each telecommunication company's network,

said communication service request designates  
5 the bandwidth of a communication path to be assured,  
and

said first means searches said memory means for  
an information entry of communication service  
definition matched with a bandwidth designated by said  
10 communication service request.

14. The server according to claim 11, wherein each  
of information entries stored in said memory means  
includes, as a part of said communication service  
15 definition information, information indicative of the  
quality of communication service provided by each  
telecommunication company's network,

said communication service request designates  
the quality of communication service on a communication  
20 path to be assured, and

said first means searches said memory means for  
an information entry of communication service  
definition matched with the quality of communication  
service designated by said communication service  
25 request.